



Power contactor, AC-3 9 A, 4 kW / 400 V 1 NO, 230 V AC, 50 / 60 Hz 3-pole, Size S00 screw terminal

|  |                            |
|--|----------------------------|
| <b>product brand name</b>  | SIRIUS                     |
| <b>product designation</b>   | Power contactor            |
| <b>product type designation</b>  | 3RT2                       |
| <b>General technical data</b>  |                            |
| <b>size of contactor</b>   | S00                        |
| <b>product extension</b>   |                            |
| • function module for communication  | No                         |
| • auxiliary switch   | Yes                        |
| <b>power loss [W] for rated value of the current at AC in hot operating state</b>                | 2.1 W                      |
| • per pole   | 0.7 W                      |
| <b>power loss [W] for rated value of the current without load current share typical</b>          | 4.2 W                      |
| <b>insulation voltage</b>  |                            |
| • of main circuit with degree of pollution 3 rated value   | 690 V                      |
| • of auxiliary circuit with degree of pollution 3 rated value                                    | 690 V                      |
| <b>surge voltage resistance</b>  |                            |
| • of main circuit rated value  | 6 kV                       |
| • of auxiliary circuit rated value   | 6 kV                       |
| maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1 | 400 V                      |
| <b>shock resistance at rectangular impulse</b>   |                            |
| • at AC  | 6,7g / 5 ms, 4,2g / 10 ms  |
| <b>shock resistance with sine pulse</b>  |                            |
| • at AC  | 10,5g / 5 ms, 6,6g / 10 ms |
| <b>mechanical service life (switching cycles)</b>  |                            |
| • of contactor typical   | 30 000 000                 |
| • of the contactor with added electronically optimized auxiliary switch block typical            | 5 000 000                  |
| • of the contactor with added auxiliary switch block typical                                     | 10 000 000                 |
| <b>reference code acc. to IEC 81346-2</b>  | Q                          |
| <b>Substance Prohibitance (Date)</b>   | 01.10.2009                 |
| <b>Ambient conditions</b>  |                            |
| installation altitude at height above sea level maximum  | 2 000 m                    |
| <b>ambient temperature</b>   |                            |
| • during operation   | -25 ... +60 °C             |
| • during storage   | -55 ... +80 °C             |
| <b>relative humidity minimum</b>   | 10 %                       |
| <b>relative humidity at 55 °C acc. to IEC 60068-2-30</b>   | 95 %                       |

|  |                   |
|--|-------------------|
| <b>maximum</b>   |                   |
| <b>Main circuit</b>  |                   |
| <b>number of poles for main current circuit</b>                        | 3                 |
| <b>number of NO contacts for main contacts</b>                         | 3                 |
| <b>operating voltage</b>   |                   |
| • at AC-3 rated value maximum  | 690 V             |
| • at AC-3e rated value maximum   | 690 V             |
| <b>operational current</b>   |                   |
| • at AC-1 at 400 V at ambient temperature 40 °C rated value            | 22 A              |
| • at AC-1  |                   |
| — up to 690 V at ambient temperature 40 °C rated value                 | 22 A              |
| — up to 690 V at ambient temperature 60 °C rated value                 | 20 A              |
| • at AC-3  |                   |
| — at 400 V rated value   | 9 A               |
| — at 500 V rated value   | 7.7 A             |
| — at 690 V rated value   | 6.7 A             |
| • at AC-3e   |                   |
| — at 400 V rated value   | 9 A               |
| — at 500 V rated value   | 7.7 A             |
| — at 690 V rated value   | 6.7 A             |
| • at AC-4 at 400 V rated value   | 8.5 A             |
| • at AC-5a up to 690 V rated value                                     | 19.4 A            |
| • at AC-5b up to 400 V rated value                                     | 7.4 A             |
| • at AC-6a   |                   |
| — up to 230 V for current peak value n=20 rated value                  | 5.3 A             |
| — up to 400 V for current peak value n=20 rated value                  | 5.3 A             |
| — up to 500 V for current peak value n=20 rated value                  | 5.3 A             |
| — up to 690 V for current peak value n=20 rated value                  | 5 A               |
| • at AC-6a   |                   |
| — up to 230 V for current peak value n=30 rated value                  | 3.5 A             |
| — up to 400 V for current peak value n=30 rated value                  | 3.5 A             |
| — up to 500 V for current peak value n=30 rated value                  | 3.6 A             |
| — up to 690 V for current peak value n=30 rated value                  | 3.3 A             |
| minimum cross-section in main circuit at maximum AC-1 rated value      | 4 mm <sup>2</sup> |
| <b>operational current for approx. 200000 operating cycles at AC-4</b> |                   |
| • at 400 V rated value   | 4.1 A             |
| • at 690 V rated value   | 3.3 A             |
| <b>operational current</b>   |                   |
| • <b>at 1 current path at DC-1</b>                                     |                   |
| — at 24 V rated value  | 20 A              |
| — at 110 V rated value   | 2.1 A             |
| — at 220 V rated value   | 0.8 A             |
| — at 440 V rated value   | 0.6 A             |
| — at 600 V rated value   | 0.6 A             |
| • <b>with 2 current paths in series at DC-1</b>                        |                   |
| — at 24 V rated value  | 20 A              |
| — at 110 V rated value   | 12 A              |
| — at 220 V rated value   | 1.6 A             |
| — at 440 V rated value   | 0.8 A             |
| — at 600 V rated value   | 0.7 A             |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>● <b>with 3 current paths in series at DC-1</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> <li>● <b>at 1 current path at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> </ul> </li> <li>● <b>with 2 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> </ul> </li> <li>● <b>with 3 current paths in series at DC-3 at DC-5</b> <ul style="list-style-type: none"> <li>— at 24 V rated value</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> </ul> </li> </ul> | <p>20 A<br/>20 A<br/>20 A<br/>1.3 A<br/>1 A</p> <p>20 A<br/>0.1 A</p> <p>20 A<br/>0.35 A</p> <p>20 A<br/>20 A<br/>1.5 A<br/>0.2 A<br/>0.2 A</p>   |
| <b>operating power</b> <ul style="list-style-type: none"> <li>● at AC-3 <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> <li>● at AC-3e <ul style="list-style-type: none"> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> </ul> </li> </ul>  | <p>2.2 kW<br/>4 kW<br/>4 kW<br/>5.5 kW</p> <p>2.2 kW<br/>4 kW<br/>4 kW<br/>5 kW</p>   |
| <b>operating power for approx. 200000 operating cycles at AC-4</b> <ul style="list-style-type: none"> <li>● at 400 V rated value</li> <li>● at 690 V rated value</li> </ul>   | <p>2 kW<br/>2.5 kW</p>  |
| <b>operating apparent power at AC-6a</b> <ul style="list-style-type: none"> <li>● up to 230 V for current peak value n=20 rated value</li> <li>● up to 400 V for current peak value n=20 rated value</li> <li>● up to 500 V for current peak value n=20 rated value</li> <li>● up to 690 V for current peak value n=20 rated value</li> </ul>   | <p>2 kVA<br/>3.6 kVA<br/>4.6 kVA<br/>5.9 kVA</p>  |
| <b>operating apparent power at AC-6a</b> <ul style="list-style-type: none"> <li>● up to 230 V for current peak value n=30 rated value</li> <li>● up to 400 V for current peak value n=30 rated value</li> <li>● up to 500 V for current peak value n=30 rated value</li> <li>● up to 690 V for current peak value n=30 rated value</li> </ul>   | <p>1.3 kVA<br/>2.4 kVA<br/>3.1 kVA<br/>4 kVA</p>  |
| <b>short-time withstand current in cold operating state up to 40 °C</b> <ul style="list-style-type: none"> <li>● limited to 1 s switching at zero current maximum</li> <li>● limited to 5 s switching at zero current maximum</li> <li>● limited to 10 s switching at zero current maximum</li> <li>● limited to 30 s switching at zero current maximum</li> <li>● limited to 60 s switching at zero current maximum</li> </ul>   | <p>155 A; Use minimum cross-section acc. to AC-1 rated value<br/>111 A; Use minimum cross-section acc. to AC-1 rated value<br/>86 A; Use minimum cross-section acc. to AC-1 rated value<br/>66 A; Use minimum cross-section acc. to AC-1 rated value<br/>55 A; Use minimum cross-section acc. to AC-1 rated value</p> |
| <b>no-load switching frequency</b> <ul style="list-style-type: none"> <li>● at AC</li> </ul>  | <p>10 000 1/h</p>   |
| <b>operating frequency</b> <ul style="list-style-type: none"> <li>● at AC-1 maximum</li> <li>● at AC-2 maximum</li> <li>● at AC-3 maximum</li> <li>● at AC-3e maximum</li> <li>● at AC-4 maximum</li> </ul>   | <p>1 000 1/h<br/>750 1/h<br/>750 1/h<br/>750 1/h<br/>250 1/h</p>  |
| <b>Control circuit/ Control</b>   |   |
| <b>type of voltage of the control supply voltage</b>  | <p>AC</p>   |

|   |  |
|---|--|
| <b>control supply voltage at AC</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>  | 230 V<br>230 V                                       |
| <b>operating range factor control supply voltage rated value of magnet coil at AC</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 0.8 ... 1.1<br>0.85 ... 1.1                          |
| <b>apparent pick-up power of magnet coil at AC</b>  |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 27 VA<br>24.3 VA                                     |
| <b>inductive power factor with closing power of the coil</b>  |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 0.8<br>0.75  |
| <b>apparent holding power of magnet coil at AC</b>  |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 4.2 VA<br>3.3 VA                                     |
| <b>inductive power factor with the holding power of the coil</b>  |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>  | 0.25<br>0.25   |
| <b>closing delay</b>  |  |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>   | 9 ... 35 ms  |
| <b>opening delay</b>  |  |
| <ul style="list-style-type: none"> <li>• at AC</li> </ul>   | 7 ... 13 ms  |
| <b>arcing time</b>  | 10 ... 15 ms   |
| <b>control version of the switch operating mechanism</b>  | Standard A1 - A2                                     |
| <b>Auxiliary circuit</b>  |  |
| number of NO contacts for auxiliary contacts instantaneous contact  | 1  |
| operational current at AC-12 maximum  | 10 A   |
| <b>operational current at AC-15</b>   |  |
| <ul style="list-style-type: none"> <li>• at 230 V rated value</li> <li>• at 400 V rated value</li> <li>• at 500 V rated value</li> <li>• at 690 V rated value</li> </ul>  | 10 A<br>3 A<br>2 A<br>1 A                            |
| <b>operational current at DC-12</b>   |  |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul> | 10 A<br>6 A<br>6 A<br>3 A<br>2 A<br>1 A<br>0.15 A    |
| <b>operational current at DC-13</b>   |  |
| <ul style="list-style-type: none"> <li>• at 24 V rated value</li> <li>• at 48 V rated value</li> <li>• at 60 V rated value</li> <li>• at 110 V rated value</li> <li>• at 125 V rated value</li> <li>• at 220 V rated value</li> <li>• at 600 V rated value</li> </ul> | 10 A<br>2 A<br>2 A<br>1 A<br>0.9 A<br>0.3 A<br>0.1 A |
| <b>contact reliability of auxiliary contacts</b>  | 1 faulty switching per 100 million (17 V, 1 mA)      |
| <b>UL/CSA ratings</b>   |  |
| <b>full-load current (FLA) for 3-phase AC motor</b>   |  |
| <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul>  | 7.6 A<br>9 A   |
| <b>yielded mechanical performance [hp]</b>  |  |
| <ul style="list-style-type: none"> <li>• for single-phase AC motor <ul style="list-style-type: none"> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> </ul> </li> <li>• for 3-phase AC motor</li> </ul>   | 0.33 hp<br>1 hp                                      |

|   |  |
|---|--|
| — at 200/208 V rated value  | 2 hp   |
| — at 220/230 V rated value  | 3 hp   |
| — at 460/480 V rated value  | 5 hp   |
| — at 575/600 V rated value  | 7.5 hp   |
| <b>contact rating of auxiliary contacts according to UL</b>   | A600 / Q600  |
| <b>Short-circuit protection</b>   |  |
| <b>design of the fuse link</b>  |  |
| <ul style="list-style-type: none"> <li>● for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>● for short-circuit protection of the auxiliary switch required</li> </ul>   | gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)<br>gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)<br>gG: 10 A (500 V, 1 kA)   |
| <b>Installation/ mounting/ dimensions</b>   |  |
| <b>mounting position</b>  | +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface   |
| <b>fastening method</b>   | screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715   |
| <ul style="list-style-type: none"> <li>● side-by-side mounting</li> </ul>   | Yes  |
| <b>height</b>   | 58 mm  |
| <b>width</b>  | 45 mm  |
| <b>depth</b>  | 73 mm  |
| <b>required spacing</b>   |  |
| <ul style="list-style-type: none"> <li>● with side-by-side mounting <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> <li>● for grounded parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— at the side</li> <li>— downwards</li> </ul> </li> <li>● for live parts <ul style="list-style-type: none"> <li>— forwards</li> <li>— upwards</li> <li>— downwards</li> <li>— at the side</li> </ul> </li> </ul> | 10 mm<br>10 mm<br>10 mm<br>0 mm<br>10 mm<br>10 mm<br>6 mm<br>10 mm<br>10 mm<br>10 mm<br>10 mm<br>6 mm  |
| <b>Connections/ Terminals</b>   |  |
| <b>type of electrical connection</b>  |  |
| <ul style="list-style-type: none"> <li>● for main current circuit</li> <li>● for auxiliary and control circuit</li> <li>● at contactor for auxiliary contacts</li> <li>● of magnet coil</li> </ul>  | screw-type terminals<br>screw-type terminals<br>Screw-type terminals<br>Screw-type terminals   |
| <b>type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>● for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>● at AWG cables for main contacts</li> </ul>  | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup><br>2x (0,5 ... 1,5 mm <sup>2</sup> ), 2x (0,75 ... 2,5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup><br>2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )<br>2x (20 ... 16), 2x (18 ... 14), 2x 12 |
| <b>connectable conductor cross-section for main contacts</b>  |  |
| <ul style="list-style-type: none"> <li>● solid</li> <li>● stranded</li> <li>● finely stranded with core end processing</li> </ul>   | 0.5 ... 4 mm <sup>2</sup><br>0.5 ... 4 mm <sup>2</sup><br>0.5 ... 2.5 mm <sup>2</sup>  |
| <b>connectable conductor cross-section for auxiliary contacts</b>   |  |
| <ul style="list-style-type: none"> <li>● solid or stranded</li> <li>● finely stranded with core end processing</li> </ul>   | 0.5 ... 4 mm <sup>2</sup><br>0.5 ... 2.5 mm <sup>2</sup>   |
| <b>type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>● for auxiliary contacts</li> </ul>  |  |

|  |   |
|--|---|
| — solid or stranded  | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> ), 2x 4 mm <sup>2</sup> |
| — finely stranded with core end processing                     | 2x (0.5 ... 1.5 mm <sup>2</sup> ), 2x (0.75 ... 2.5 mm <sup>2</sup> )                       |
| • at AWG cables for auxiliary contacts                         | 2x (20 ... 16), 2x (18 ... 14), 2x 12   |
| <b>AWG number as coded connectable conductor cross section</b> |   |
| • for main contacts  | 20 ... 12   |
| • for auxiliary contacts                                       | 20 ... 12   |

| Safety related data   |  |
|---|--|
| <b>product function</b>   |  |
| • mirror contact acc. to IEC 60947-4-1                                    | Yes; with 3RH29                                  |
| B10 value with high demand rate acc. to SN 31920                          | 1 000 000  |
| <b>proportion of dangerous failures</b>                                   |  |
| • with low demand rate acc. to SN 31920                                   | 40 %   |
| • with high demand rate acc. to SN 31920                                  | 73 %   |
| failure rate [FIT] with low demand rate acc. to SN 31920                  | 100 FIT  |
| <b>T1 value for proof test interval or service life acc. to IEC 61508</b> | 20 y   |
| <b>protection class IP on the front acc. to IEC 60529</b>                 | IP20   |
| <b>touch protection on the front acc. to IEC 60529</b>                    | finger-safe, for vertical contact from the front |
| <b>suitability for use</b>  |  |
| • safety-related switching OFF  | Yes  |

### Certificates/ approvals

#### General Product Approval



[Confirmation](#)



[KC](#)



| EMC | Functional Safety/Safety of Machinery | Declaration of Conformity | Test Certificates |
|-----|---------------------------------------|---------------------------|-------------------|
|-----|---------------------------------------|---------------------------|-------------------|



[Type Examination Certificate](#)



EG-Konf.

[UK Declaration of Conformity](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

### Marine / Shipping



### Marine / Shipping other



[Confirmation](#)



[Confirmation](#)

### Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mfb=3RT2016-1AP01>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1AP01>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AP01>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

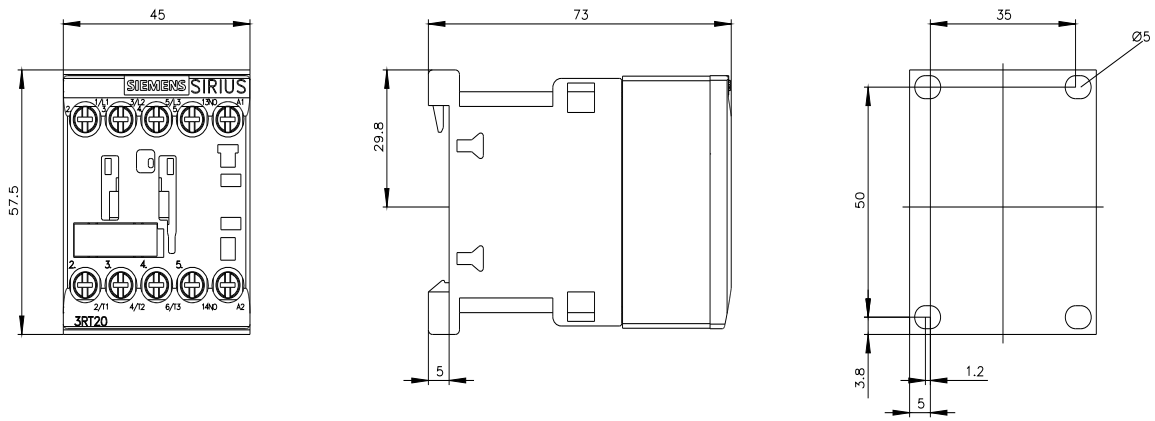
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RT2016-1AP01&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1AP01&lang=en)

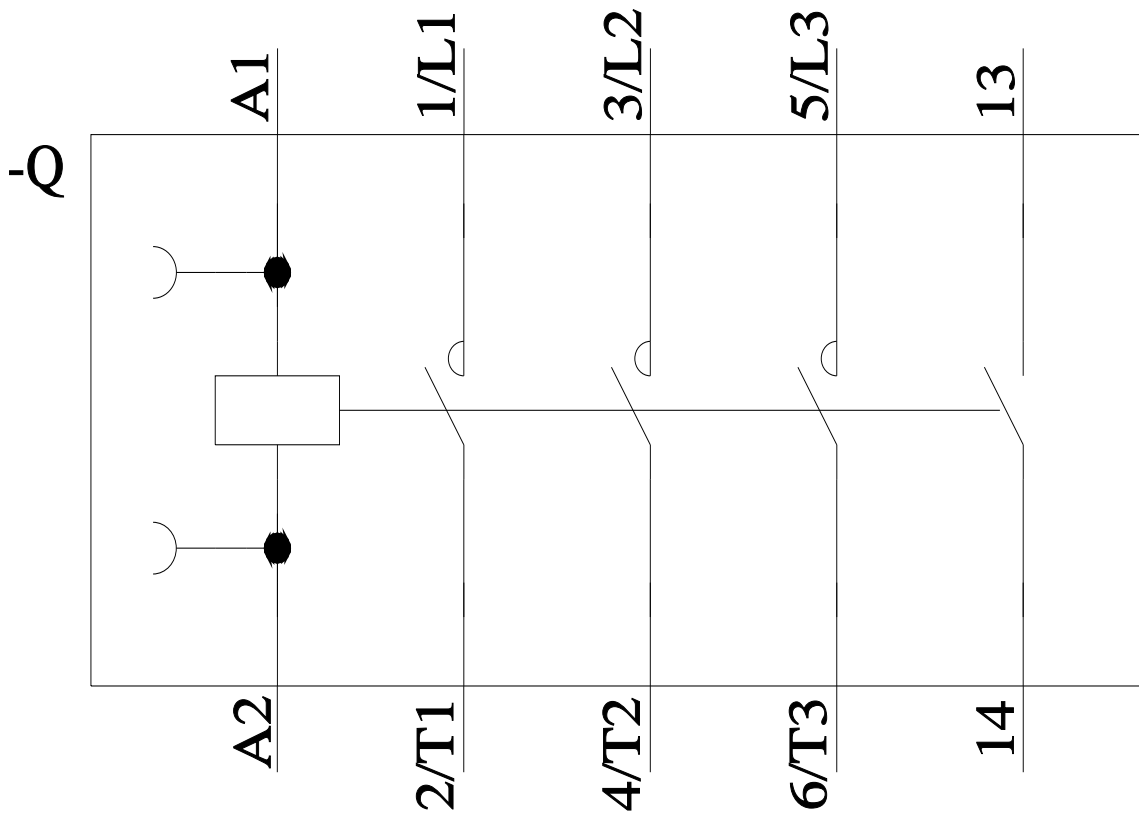
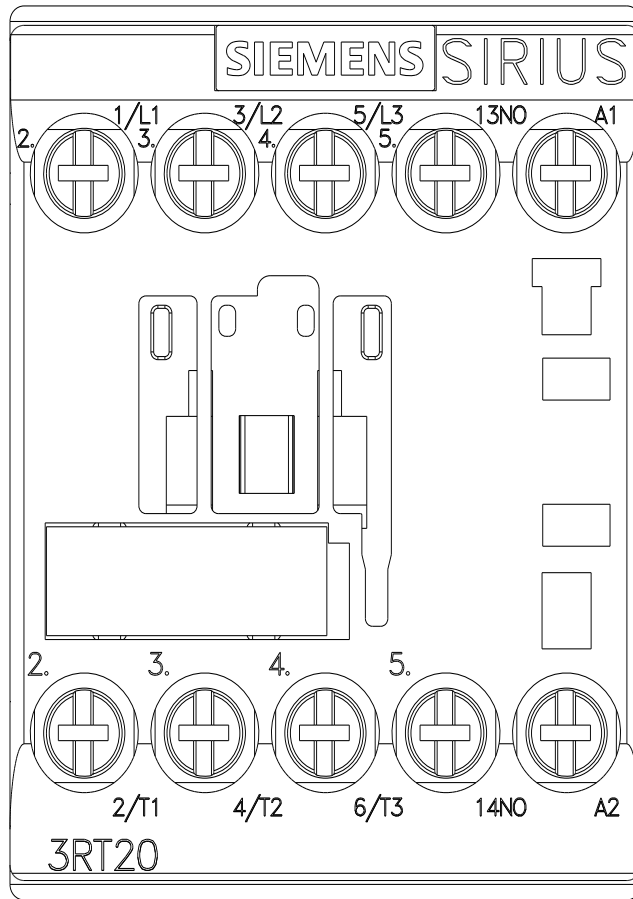
Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AP01/char>

Further characteristics (e.g. electrical endurance, switching frequency)

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1AP01&objecttype=14&gridview=view1>





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